

- ☒ fossil energy
- ☐ environmental
- ☐ energy efficiency
- ☐ other

## HEALY CLEAN COAL PROJECT

### States Impacted:

Alaska

### Benefit Areas:

Environment, Energy Security,  
Technology Leadership,  
Lower Cost of Electricity

### Participants:

U.S. Department of Energy;  
Alaska Industrial Development  
and Export Authority, Golden  
Valley Electric Association,  
Inc.; TRW; Babcock & Wilcox  
Company; and Stone &  
Webster Engineering  
Corporation

### FETC Contact:

Robert M. Kornosky\*

Office: (412) 386-4521

E-Mail: [kornosky@fetc.doe.gov](mailto:kornosky@fetc.doe.gov)

### MAIL ADDRESS:

\* U.S. Department of Energy  
P.O. Box 10940  
626 Cochran's Mill Road  
Pittsburgh, PA 15236-0940

\*\*U.S. Department of Energy  
P.O. Box 880  
3610 Collins Ferry Road  
Morgantown, WV 26507-0880

### WEBSITE:

[www.fetc.doe.gov](http://www.fetc.doe.gov)

### Description

A new, advanced power plant in Healy, Alaska, features state-of-the-art coal combustors and pollution controls, for power operation. The 50-megawatt Healy Clean Coal Project, located adjacent to Golden Valley Electric Association's existing 25-megawatt Unit No. 1 power plant near the boundary of Denali National Park and Preserve, is a \$242 million cooperative agreement between the Department and the Alaska Industrial Development and Export Authority. Results from initial environmental compliance testing performed in 1998, demonstrated reduced nitrogen oxide emissions — known to contribute to smog and acid rain — nearly 25 percent lower than the permit requirement. Emissions of sulfur dioxide, were also lower than permit allowances, 0.01 pounds per million Btus compared to the permit requirement of 0.10 pounds per million Btus on low-sulfur, run-of-mine coal burned. Demonstration operations have focused on blending the run-of-mine coal with up to 65 percent waste coal, and by the end of its first year of demonstration operations, 156,000 tons of Alaskan run-of-mine and waste coals have been converted to over 231 (gross) gigawatts of electricity for Alaskan consumers. The average capacity factor for the year including coal start-up and testing was 44 percent.

### Goals

The goal of the project is to demonstrate an advanced power generation system that features state-of-the-art coal combustors and pollution controls, reducing NO<sub>x</sub> emissions to 0.2 lb/million Btu, particulate emissions to 0.015 lb/million Btu, and attaining SO<sub>2</sub> removals greater than 90 percent. A broad range of coals and waste coals are being fired.

### Tangible Benefits

**National:** Successful demonstration will provide an integrated technology for converting a wide variety of both coal and waste coal types and ranks to electric power with minimal emissions of NO<sub>x</sub>, SO<sub>2</sub>, and particulates. The technology will be available to both domestic and international markets.

**Regional:** Within Interior Alaska, demonstration of this technology creates additional energy generation capabilities, provides stabilization for coal mining and power plant operation; augments or replaces aging coal powered generation; and locks in known base load power via a long-term coal sales agreement. In addition, construction of the Healy Clean Coal Project resulted in the employment of approximately 200 workers over a two-year period, and also resulted in the creation of approximately 35 permanent positions in the Healy and Fairbanks area.

**Local:** The project has demonstrated the attractiveness of utilizing local coal -- from the only active coal mine in Alaska -- in combination with modern combustion technology. But not only did the local economy benefit during the construction phase, the construction camp facilities have been converted into a hotel serving tourist overflow from Denali National Park and Preserve, with the hotel bed tax providing a source of revenue for the local government.